

Measurements:

Pharynx	—	Oesophagus	M	Anus	15.2 mm.
0.2	—	12.0	50.0	99.0	
0.3	—	1.4	1.8	1.2	

Diagnosis: Deontostoma with ocelli and a large number of short setae in the region anterior to the nerve-ring. Cuirass with six equal, imperforate, anchor-shaped lobes. Pharynx almost none; no armature. Spicular apparatus consisting of spicula, single gubernaculum, and knee-shaped telamon. On each side of the anus of the male an irregular series of eleven setae. Ventro-medial tubular outlet level with the middle of the spicula. Four rhomboid wartlike ventro-submedian structures in front of the spicula.

ZOOLOGY.—*A North American species of Acetes.*¹ H. J. HANSEN, Copenhagen. (Communicated by WALDO SCHMITT.)

The very interesting genus *Acetes*, established in 1830 by H. Milne-Edwards on a single Indian species, belongs to the Sergestidae, the lowest, or, as may be said, the most primitive family among Crustacea Decapoda. The genus comprises scarcely a dozen species, the majority of which live in the Indian Ocean and the adjacent tropical areas of the Pacific, yet a single species goes so far northward as Korea. From the Atlantic only three species have hitherto been known, all South American forms, viz.: two species from Brazil and the third from a lagoon at Rio Paraguay, near its junction with Rio Parana. (A single specimen of the last-named form was also taken "in the outlet of Riacho del Oro in Rio de la Plata in feebly brackish water.") The discovery of a new Atlantic species secured as far northward as Beaufort, N. C. (about lat. 34° 47' N.) seems interesting.

In the report "The Sergestidae of the Siboga Expedition"² the present writer reviewed the genus *Acetes*, describing not only the species taken by the Dutch expedition but also other forms preserved in the Copenhagen Museum, and among these two species from the western side of South America. Besides, the species mentioned in the literature, but unknown to me, were enumerated. Unfortunately, I did not know that Stanley Kemp in his series, "Notes on Crustacea Decapoda in the Indian Museum," had published an excellent paper, "The genus *Acetes* Milne-Edwards,"³ in which he described and gave

¹ Received Oct. 20, 1932.

² *Siboga Exp.*, vol. 38, 1919.

³ *Records of the Indian Museum*, vol. 13, pp. 43-58, 1917.

analytical figures of four species, one of which was new. Disturbed conditions owing to the great war delayed the receipt of this paper.

In my "Report" mentioned above a somewhat detailed diagnosis of the genus *Acetes* was given. Under "remarks," I added several statements, some of which may be quoted here.

"The genus *Acetes* differs from *Sergestes* in several characters: The maxillulae and the first maxillipeds without palp, the maxillae with undivided lobe, first pair of legs with a short chela as the two following pairs, fourth and fifth pairs of legs wanting excepting the coxae of (probably) fifth pair in the male, finally only five pleurobranchiae above third pair of maxillipeds and the thoracic legs. In the absence of two pairs of thoracic legs *Acetes* agrees with *Lucifer*, but otherwise it is far removed from this peculiar genus and related to *Sergestes* and *Sicyonella*."

"The males show excellent specific characters in the relative length of third joint of the antennulae, in the joints of the lower antennular flagellum, and especially in the structure of [the] clasping organ, finally in the structure of the petasma. In the females the ventral area at and behind the base of the last pair of legs affords most useful characters. The females are on the whole somewhat or even considerably larger than the males."

The new form is closely allied to *Acetes brasiliensis* Hansen.⁴ The following descriptions of both sexes are worked out to facilitate comparison of the two species.

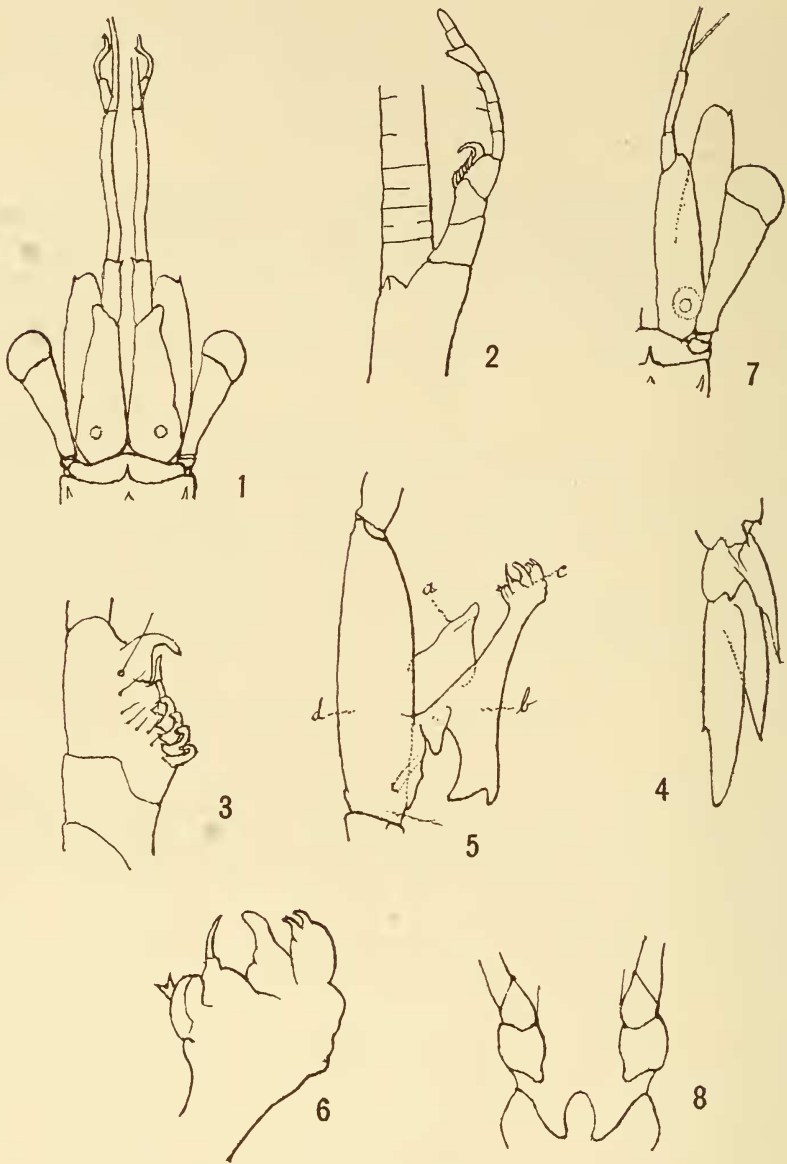
Acetes carolinae, new species

(Figs. 1-8)

Male.—The anterior keel of the carapace has, as in *A. brasiliensis*, only a single tooth, as the denticle, which in most forms exists between that tooth and the rostrum, has disappeared. The rostrum is short with the end acute. Transverse diameter of the eye a little more than one third as long as the distal joint of the stalk with eye.

Antennulae with the peduncle long (Fig. 1); its third joint very elongated, distinctly curved, almost two and one half times as long as the inner margin of second joint. Lower flagellum (Fig. 2) somewhat longer than the inner margin of second peduncular joint; its thickened 3-jointed proximal portion occupies a little less than half of the flagellum. The inner (upper) margin of the third joint is convex and from near its base to considerably beyond its middle the joint has on its inner surface near the margin mentioned a close row of 6 spines, of which the proximal ones have the distal half very curved with the end obtuse (Fig. 3), while the curvature is much feebler on the fifth spine, and the sixth spine is nearly straight, acute. Close beyond the sixth spine and somewhat before the end of the joint, the upper margin possesses on its inner side a large, claw-shaped process which is very broad at the base, while its more distal portion is only moderately robust and extremely recurved. The distal part of the flagellum is slender, 6-jointed, with an oblique and distally obtuse short process on the distal half of the antepenultimate joint (Fig. 2).

⁴ Siboga Exp., vol. 38, p. 48, 1919.



Figures 1-8. *Acetes carolinae*, new species.

Fig. 1. Anterior part of carapace with eyes, antennulae, and antennal squamae of a male, $\times 12$. Fig. 2. Distal part of right antennular peduncle with proximal part of upper flagellum and the whole lower flagellum of a male, from the outer side, $\times 47$. Fig. 3. Major distal part of the thickened portion of the lower flagellum seen in fig. 2, from the inner side, $\times \text{ca. } 150$. Fig. 4. Left uropod and telson of a male, $\times 14$. Fig. 5. Right petasma, from in front, $\times 30$: *a*, pars externa; *b*, pars media; *c*, capitulum; *d*, peduncle of first abdominal leg. Fig. 6. Capitulum of the petasma shown in fig. 5, $\times 114$. Fig. 7. Right half of the front part of the carapace with appendages of a female, from above, $\times 21$. Fig. 8. Proximal portions of third pair of legs and the genital area of a female, from below, $\times 21$.

The antennal squama (Fig. 1) does not reach the distal end of the second antennular joint. Coxae and trochanters of third pair of legs without a tooth at their distal inner angle. Genital coxae very obliquely triangular, but much broader than long and distally very broadly rounded. Exopod of uropods (Fig. 4) about five times as long as broad; the ciliated part occupies somewhat more than one third of the outer margin, and a minute tooth is seen at the end of the glabrous part.

The petasma (Fig. 5) is in most features rather similar to that in *A. brasiliensis*, but it is sharply distinguished by shape and armament of the capitulum. Pars astringens is completely wanting. Pars externa (*a*) much smaller than in *A. brasiliensis*, considerably longer than broad, with its distal free part triangular and a little longer than broad. Pars media (*b*) is rather slender; its free proximal portion is considerably longer than broad with the outer margin concave, while the basal margin is somewhat deeply and obliquely concave, with the inner proximal corner produced into a somewhat short, subacute process, and the outer corner much larger, subacute. Beyond the insertion of pars externa, pars media is long and narrows greatly to the thickened capitulum (*c*). The capitulum is subglobular and produced along the outer margin into four lobes; the proximal lobe is moderately short, thick, rounded, with a small chitinous bifid plate at the outer side; the second lobe is triangular, broader than long, but terminates in a long, strong, slightly curved spine; the third lobe is longer than broad, with its distal half shaped as a somewhat curved, moderately slender protuberance, with obtuse end; the fourth lobe is somewhat longer than broad, ovate, with two somewhat small, curved, acute, spiniform processes on the end.

Length.—11.5 mm.

Female.—Rostrum and crest as in the male. Eyes as in the male. Antennulae (Fig. 7) with the peduncle very much shorter than in the male, but the first joint is slightly shorter than eye-stalk with eye, thus slightly shorter than in the male. Second joint proportionately very much shorter than in the male, a little more than half as long as the third joint, which is straight and conspicuously more slender than in the other sex. Lower flagellum even slightly longer than third joint of the peduncle, slender, and apparently seven-jointed.

The antennal squama reaches to or slightly beyond the middle of third antennular joint. Coxae of third pair of legs (Fig. 8) with the major part of the inner margin convex and no tooth below or at the end, while the proximal inner corner is produced into an obtuse protuberance.

The genital area (Fig. 8) is moderately long, broad; the median part of its posterior margin is very strongly procurved, constituting a bend which is conspicuously longer than broad and obtuse at the base in the middle; this curious structure is due to the fact that each sublateral part of the genital area is produced posteriorly into a proportionately long, obliquely triangular, distally sacciform and quite free protuberance with the end obtuse.

Length.—15 mm.

Remarks.—*A. carolinae* is closely allied to *A. brasiliensis*, as the differences in most features are small, but the lobes of the capitulum of the petasma afford striking characters between the males of the two species, while the shape of the genital area exhibits excellent differences between their females.

Occurrence.—A large number of specimens were sent to me by Dr. James S. Gutsell, of the Beaufort, North Carolina, laboratory of the U. S. Bureau of Fisheries, who wrote: "All were collected in a trawl net near the Sea Buoy off Beaufort Inlet, October 30, 1929." And in a later letter he writes: "With

bobbinet around the tip of an otter trawl this *Acetes* sometimes is obtained in gallons at a time, especially in late summer and early fall."

ZOOLOGY.—*The eggs of Goniobasis virginica Gmelin and Anculosa carinata Bruguière.*¹ CHARLES P. WINSOR, Johns Hopkins University. (Communicated by RAYMOND PEARL.)

So far as I know the eggs of these two species have never been reported. Jewell² has described the eggs of *G. liviscens correcta*, and Van

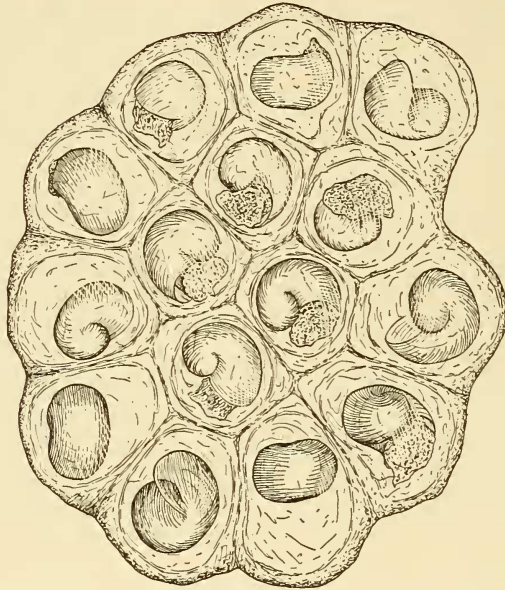


Fig. 1.—Egg mass of *Goniobasis virginica*. $\times 36$.

Cleave³ has described the eggs and egg-laying habits of species of *Pleurocera Lewisii* and *P. acuta*.

During June of this year several trips were made to Gunpowder Falls, a stream about 15 miles north of Baltimore, in which *G. virginica* and *A. carinata* are abundant. (A description of the locality

¹ From the Department of Biology of the School of Hygiene and Public Health of the Johns Hopkins University. Received September 23, 1932.

² Jewell, Dorothea Dodd, Observations on reproduction in the snail *Goniobasis*: Nautilus, vol. 44, pp. 115-119, 1931.

³ Van Cleave, H. J., Studies on snails of the genus *Pleurocera*. I. The eggs and egg-laying habits: Nautilus, vol. 46, pp. 29-34, 1932.